

FIG. 1

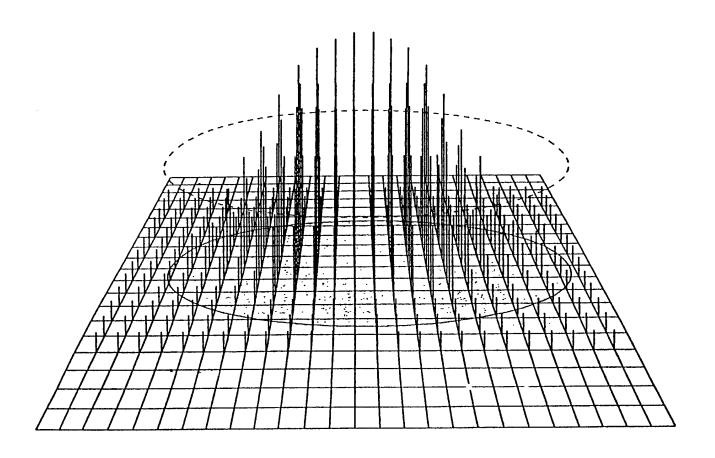


FIG. 2

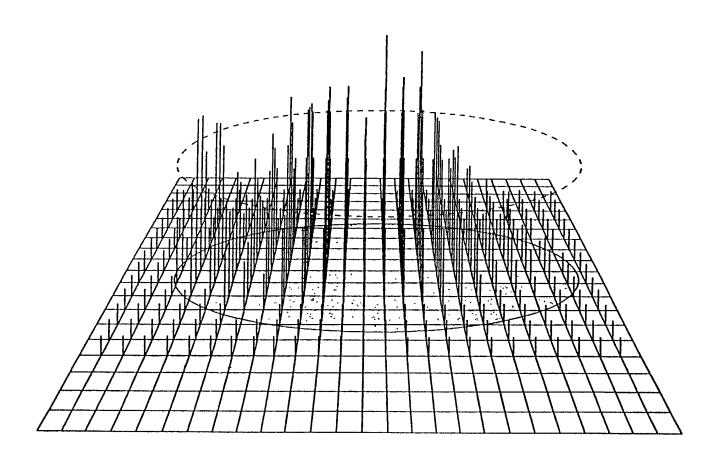


FIG. 3

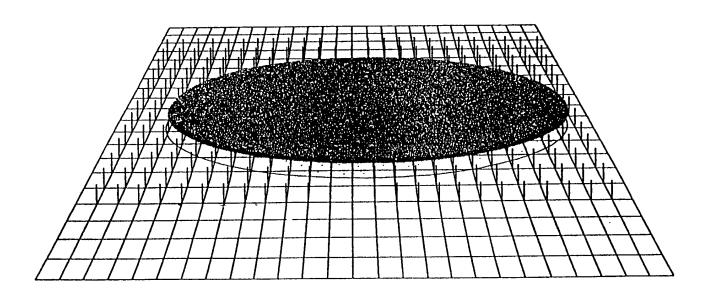


FIG. 4

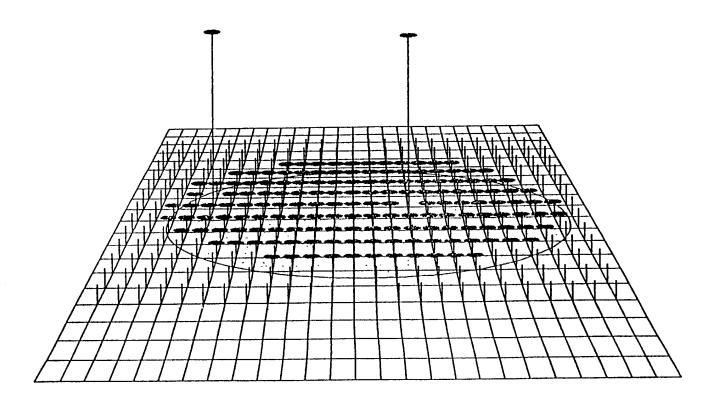


FIG. 5

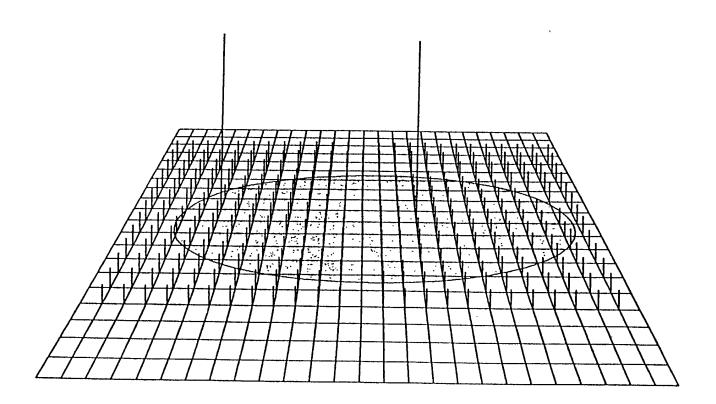


FIG. 6

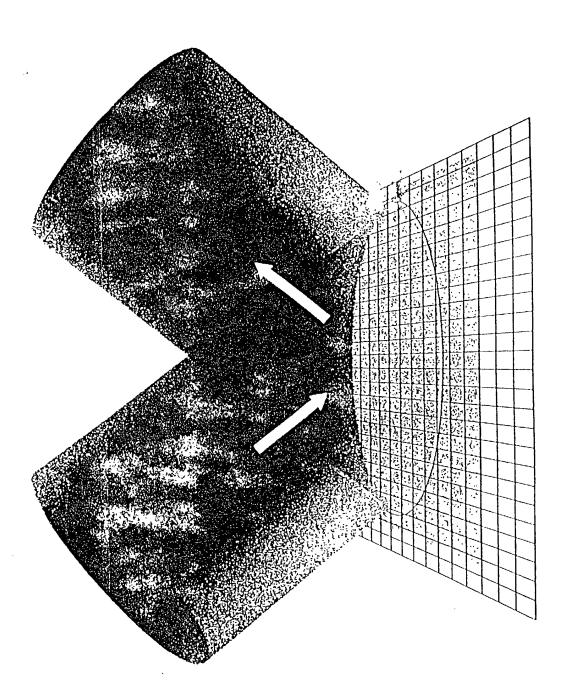


FIG. 7

FIG. 8

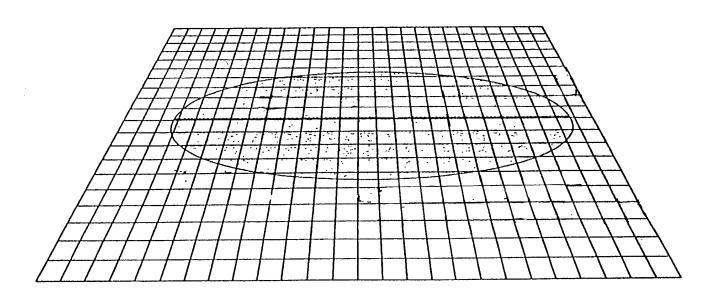
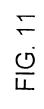
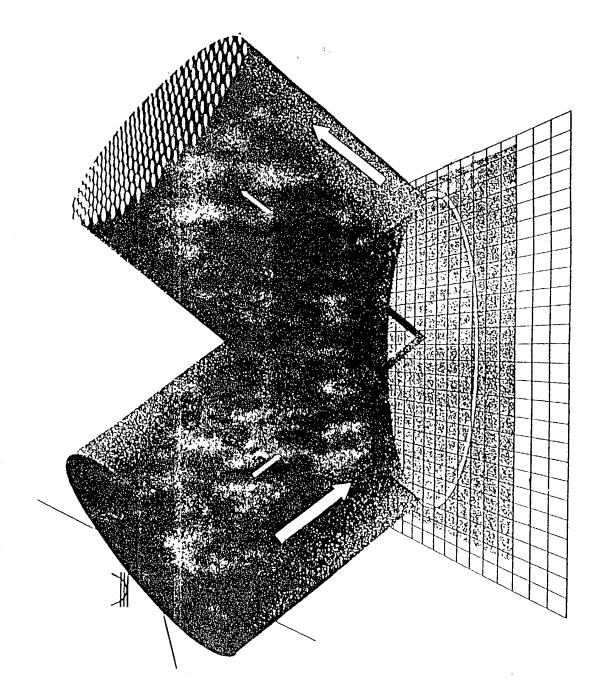


FIG. 9

FIG. 10





## Examples of Optical Signal Formats

Principle	Label Type	Instrument	DDx Status
Scatter	polymer beads/particles silica beads/particles magnetic beads/particle metal beads/particles	s	demonstrated
Optical absorption	metal coated beads/particolloidal gold magnetic beads	reflectometry photometry	scheduled
Change in polarization state	polymer beads silica beads	ellipsometry (with compensator) polarimetry (wout compensator)	scheduled
Change in refractive index	high refractive index or optically active materials	ellipsometry (with compensator) polarimetry (wout compensator)	scheduled
Chiral effects	azio dyes chiral compounds		envisioned
Diffraction effects	patterned surface	interferometry	envisioned
Spectroscopic effects	wavelength selective materials	spectrometer	envisioned

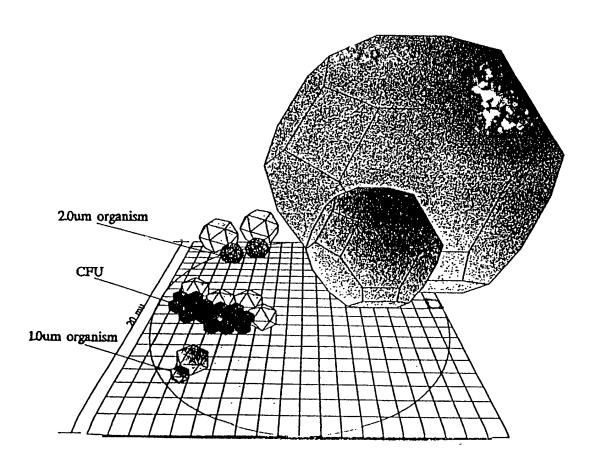


FIG. 14

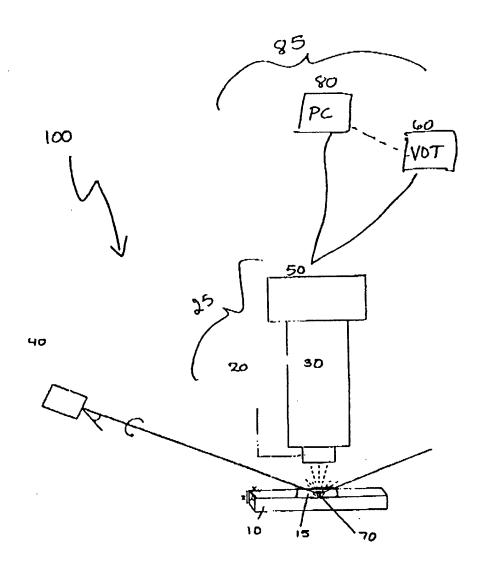
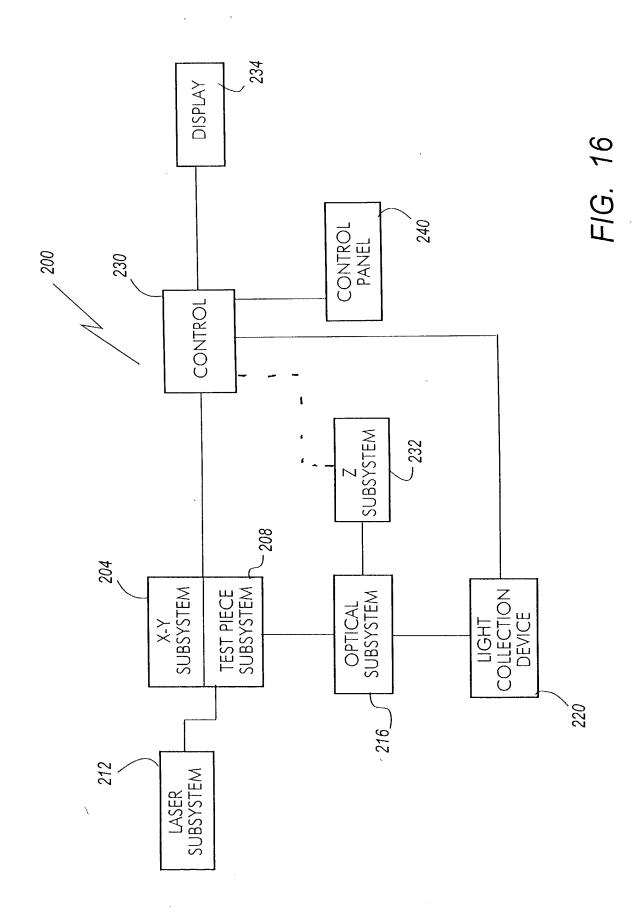


FIG. 15



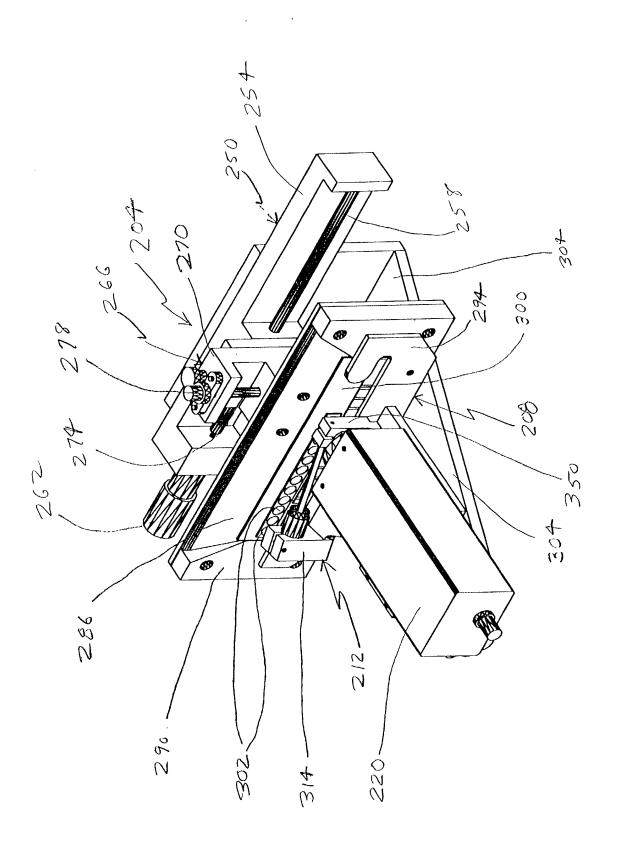


FIG. 17

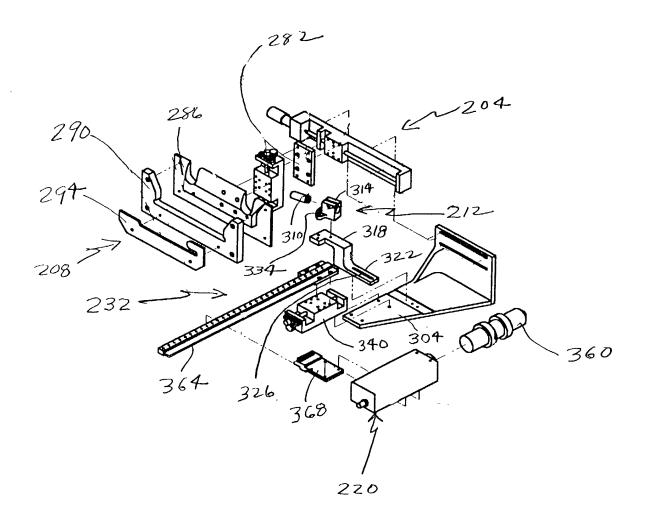


FIG. 18

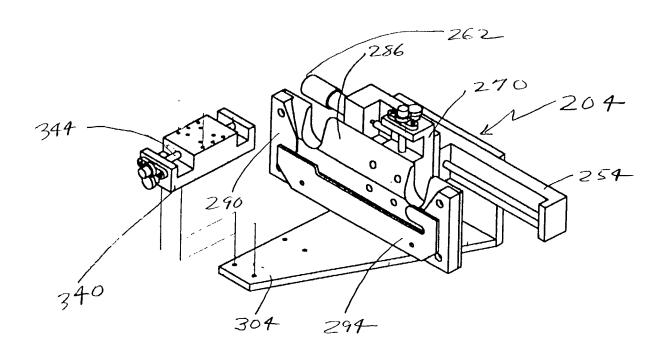


FIG. 19

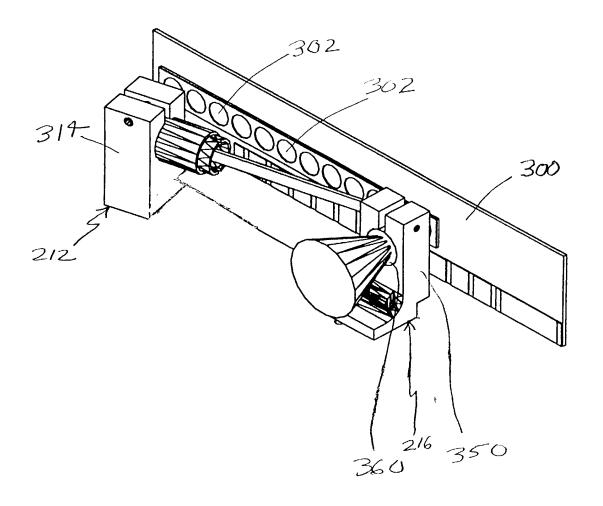


FIG. 20

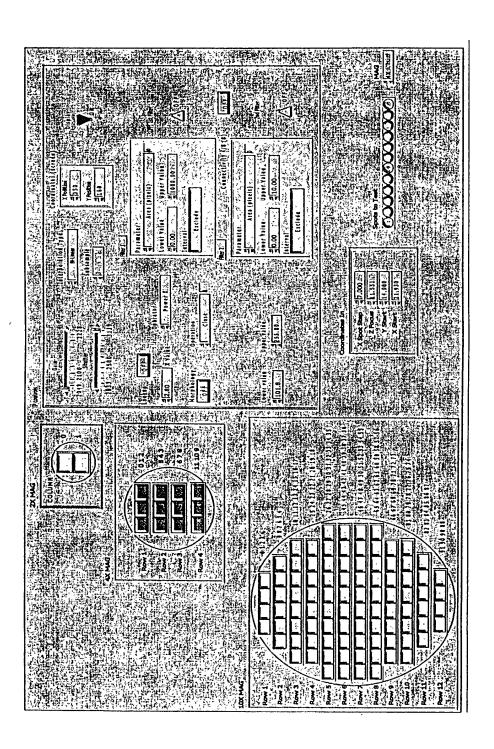


FIG. 21

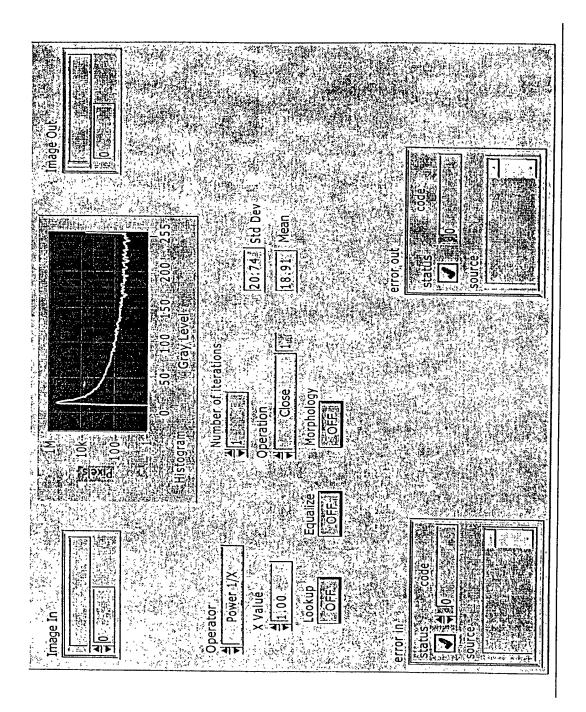


FIG. 22

## **INSTRUMENT SETUP**

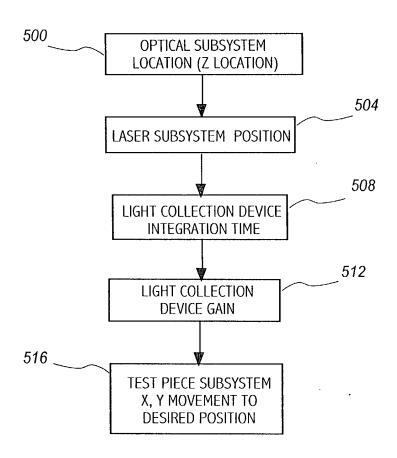


FIG. 23

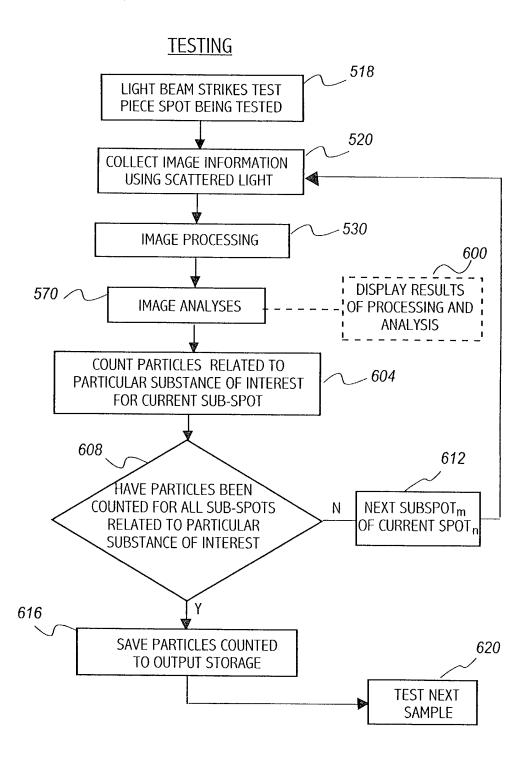


FIG. 24

## **IMAGE PROCESSING**

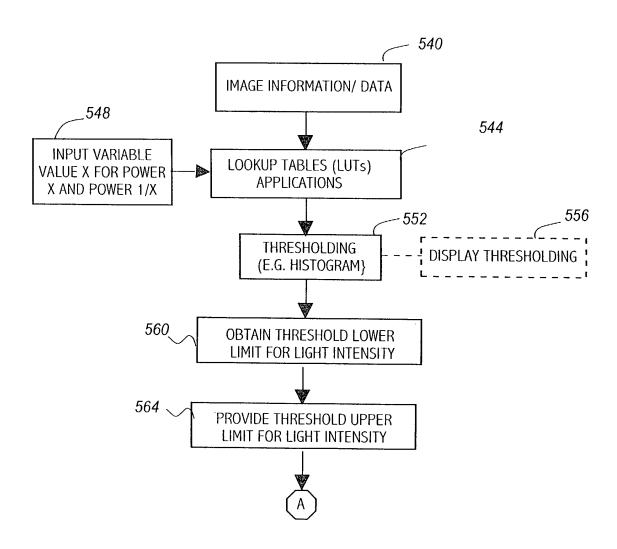


FIG. 25

## **IMAGE ANALYSIS**

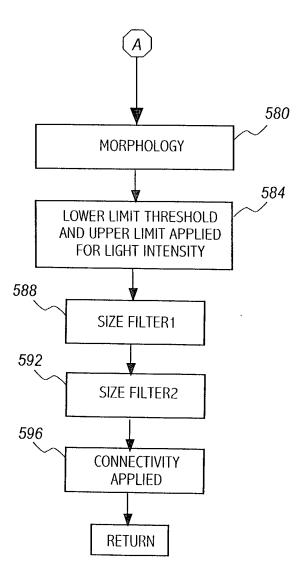


FIG. 26